

Chapter 2

EXISTING AIRPORT FACILITIES

Tucson International Airport currently occupies about 5,530 acres at an elevation of 2,641 feet above mean sea level (MSL). Existing facilities on the Airport are shown on Exhibit 2-1. Table 2-1 provides an inventory of existing buildings on the Airport. The primary Airport facilities described in this chapter are: the airfield, aviation, the passenger terminal complex, air cargo and air mail facilities, general aviation facilities, and other building areas (e.g., military, industrial, and government). Ground transportation access to Airport facilities is also described.

AIRFIELD

Runways

The existing airfield, as shown on Exhibit 2-1, consists of three active runways, as described in Table 2-2.

Runway 11L-29R is the primary runway and is used by air carrier and military aircraft when flight schedules and weather conditions permit. Crosswind Runway 3-21 is available when weather and wind conditions require its use. The crosswind runway is also used for convenience by general aviation aircraft when conditions allow. Runway 11R-29L is a temporary runway used by general aviation aircraft. It was originally built as a taxiway. All runways are constructed of asphaltic concrete. Specific data for each of the three runways are presented in Table 2-3.

Taxiways

Taxiways provide aircraft access between the runways and the passenger terminal complex, general and corporate aviation areas, military facilities, air cargo buildings, and other aircraft parking areas. All taxiways on the Airport are either 40 or 75 feet wide. Taxiway A, 75 feet wide, is parallel to and northeast of Runways 11L-29R and 11R-29L, and extends the full length of Runway 11L-29R. Aircraft must cross Runway 11L-29R to access Runway 11R-29L from Taxiway A. Taxiway C, 40 feet wide, is parallel to and southwest of Runway 11R-29L and extends most of the length of the runway. Taxiway 2, 75 feet wide, is parallel to and southeast of Runway 3-21 and extends along the length of the runway except for the last 600 feet at its southwestern end.

Table 2-1
BUILDING INVENTORY
Tucson International Airport

Building No.	Building name	Area (sq ft)	Type of construction	Condition	Age (years)	Building tenant(s)	Parking spaces
B-8	Spirit Aviation Hangar	19,500	Wood and corrugated cement siding	Fair	41	Spirit Aviation	22 marked
B-10	Old Cochise Hangar	10,200	Wood and corrugated cement siding	Good	34	Spirit Aviation	25 marked
B-40	Tower & Flightline	15,200	Steel and corrugated cement siding	Good	36	Federal Aviation Administration	108 marked
B-65	Operations Storage/Oil Room	750	Brick	Good	34	Tucson Airport Authority	Service vehicles
B-154	Two-Car Ramada	400	Steel	Good	Unknown	Tucson Airport Authority	2
B-155	Nine-Car Ramada	1,850	Steel	Good	Unknown	Tucson Airport Authority	9
B-159	Field Maintenance Trailer	672	Trailer	Good	13	Tucson Airport Authority	8
B-162	Electric Shop	2,400	Double wide trailer	Good	20	Tucson Airport Authority	6
B-168	USWS Balloon Building	400	Stucco	Good	36	National Weather Service	Loading and unloading only
B-178	Carpenter Shop	300	Wood	Fair	45	Tucson Airport Authority	6
B-179	Landscaping Building	1,680	Wood	Fair	45	Tucson Airport Authority	6
B-220	Rontel Office Building	9,750	Concrete block	Good	36	Tucson Airport Authority, Great Lakes Airlines, SW Helicopters	40 marked
B-221	Tower Grille	2,400	Concrete block	Good	33	Air Flower, Inc.	20 marked
B-224	Electrical Vault	864	Concrete block	Good	38	Tucson Airport Authority	None
B-228	"T" Hangar and Office	22,400	Metal	Good	31	Leading Edge Aviation	18
B-229	"T" Hangar and Office	21,800	Metal	Good	31	Leading Edge Aviation	18

Table 2-1 (page 2 of 8)
BUILDING INVENTORY
 Tucson International Airport

Building No.	Building name	Area (sq ft)	Type of construction	Condition	Age (years)	Building tenant(s)	Parking spaces
B-230	Terminal Building Complex	320,000	Brick and concrete	Good	32	Tucson Airport Authority, America West, American, Alaska, Delta, Northwest, Reno, Southwest, Continental, United, USAir, Aero California, Skywest, Alamo, Avis, Budget, Dollar, Value, Hertz, National; CA One Serv., Paradise-Desert House, Airport Terminal Service, Elsinore Mnt, Interspace Advertising	2,480
B-231	Rental Car Ramadas, Wash Building & Offices	10,910	Masonry	Good	2	Various Rental Car Agencies (See B-230)	557
B-232	International Terminal Building	15,600	Brick	Good Converted Expanded	30 1983 1986	Aeromexico, Aerolitoral, Immigration and Naturalization Service, U.S. Customs, U.S. Department of Agriculture	24 marked
B-233	Storage Building	1,200	Modular	Good	2	Puchi	0
B-239	Old Air Freight Building	14,608	Metal	Good	36	Radix, Southwest, Northwest, American, Suxarey International, Synergy Cargo, Continental, America West	29 marked
B-240	Old Learjet Marketing	38,500	Adobe block	Good	24	Vacant—Tucson Airport Authority Storage	
B-241	Spirit Aviation/Drug Enforcement Administration Hangar	4,000	Metal	Good	4	Spirit Aviation/Drug Enforcement Administration	80 marked
B-242	Jackson Condo Hangars	22,400	Metal	Good	24	Lone Mountain Ranch, C & L Enterprises, Prestige Homes, Jay Chamberlain, Joseph Bidwell, Paul Crews, George Koch, Donald Ewing, John Thompson, John Libby	20
B-243	Welding Shop/Storage	1,600	Metal and wood	Good	23	Tucson Airport Authority	Service vehicle only

Table 2-1 (page 3 of 8)
BUILDING INVENTORY
 Tucson International Airport

Building No.	Building name	Area (sq ft)	Type of construction	Condition	Age (years)	Building tenant(s)	Parking spaces
B-244	Air National Guard Run-up Stand	80	Metal		31	Vacant—to be removed	0
B-245	Fuel truck Ramada		Metal	Good	6	Tucson Airport Authority	6
B-246	Old Electric Shop	2,400	Wood	Good	1986 Acquired	Tucson Airport Authority	4
B-247	Hotton Aviation Enterprises	6,000	Metal	Good	22	Hotton Aviation Enterprises	32
B-248	Hotton Aviation Enterprises Hangar	3,000	Metal	Good	22	Hotton Aviation Enterprises	0
B-249	Hotton Aviation Radio Shop	3,300	Metal	Good	22	Hotton Aviation Enterprises	0
B-250	Landscaping-Chemical Storage	400	Wood	Poor	44	Tucson Airport Authority	0
B-251	Maintenance Office	2,664	Wood	Fair	50	Tucson Airport Authority	4
B-252	Shower Facility	750	Masonry	Good	20	Tucson Airport Authority	0
B-253	Greenhouse	576	Masonry and plastic	Good	20	Tucson Airport Authority	0
B-254	Warehouse	1,660	Metal	Good	3	Tucson Airport Authority	0
B-255	FedEx	16,000	Tilt-up concrete	Good	2	FedEx	8
B-259	Office Building	9,200	Steel	Good	22	Desert Diamond Casino Admin.	55
B-260	Modular Building	1,440	Modular	Good	1	Desert Diamond Casino Admin.	0
B-264	Avis Service Center	4,000	Masonry	Good	23	Avis	30
B-264A	Avis Service Center	1,440	Modular unit	Good	Unknown	Avis	0
B-265	Hertz Service Center	5,600	Masonry	Good	23	Hertz	50
B-273	Paint Shop	480	Metal	Fair	26	Tucson Airport Authority	Service vehicles
B-274	Maint. Mechanic Shop	4,000	Metal	Good	26	Tucson Airport Authority	Service vehicles
B-275	Executive Aircraft Ramada	14,000	Metal	Good	Unknown	Tucson Airport Authority	0

Table 2-1 (page 4 of 8)
BUILDING INVENTORY
 Tucson International Airport

Building No.	Building name	Area (sq ft)	Type of construction	Condition	Age (years)	Building tenant(s)	Parking spaces
B-276	Shade Ramada (Spirit)	15,200	Metal	Good	Unknown	Spirit Aviation	0
B-277	Shade Ramada (Spirit)	15,200	Metal	Good	Unknown	Spirit Aviation	0
B-279	Old Rontel Parking Ramada	1,536	Metal	Good	Unknown	Spirit Aviation	0
B-280	SW Helicopter Hangar	4,000	Metal	Good	17	SW Helicopters	0
B-281	Tucson Police Hangar	6,750	Metal	Good	17	Tucson Police Department	4 marked
B-282	Ratliff Aero Hangar & Office	5,800	Metal	Good	17	Ratliff Aero Sales, Macey & Mershon Oil	30 marked
B-283	Shade Ramadas	9,600	Metal	Good	16	Tucson Airport Authority	Service vehicles
B-284	Fire Station	10,595	Masonry	Good	18	Tucson Airport Authority	35 marked
B-285	Hotton Ramada	4,500	Metal	Good	22	Hotton Aviation Enterprises	0
B-286	Delta Maintenance	1,540	Masonry	Good	4	Delta Air Lines	10 marked
B-288	"T" Hangar & Offices	22,000	Metal	Good	17	Aviation Service LTD	Service vehicles
B-289	Lan-Dale Hangar	8,000	Metal	Good	17	Lan-Dale, U.S. Border Patrol	Service vehicles
B-292	National Weather Service Building	2,257	Brick	Good	17	National Weather Service	6
B-293	Marbor Hangar	8,000	Metal	Good	Unknown	Marbor Aviation	None
B-298	New Air Freight Building	25,548	Block and stucco	Excellent	13	Air Cargo Transit, Airborne Express, America West, American, Delta, Emery Worldwide, United, USAir, Wildcat Express	25 marked
B-299	Central Plant	7,800	Concrete block	Good	11	Tucson Airport Authority	
B-300	Flight Kitchen	25,000	Block tiltup	Good	15	Sky Chefs	56
B-301	Administration Building Ramada-East	3,200	Steel	Good	13	Tucson Airport Authority	13
B-302	Administration Building Ramada-South	2,200	Steel	Good	7	Tucson Airport Authority	12

Table 2-1 (page 5 of 8)
BUILDING INVENTORY
 Tucson International Airport

Building No.	Building name	Area (sq ft)	Type of construction	Condition	Age (years)	Building tenant(s)	Parking spaces
B-303	Substation	400	Concrete block	Good	38	Tucson Electric Power	0
B-304	Administration Building	14,275	Masonry and steel	Good	12	Tucson Airport Authority	48
B-305	Lan-Dale Hangar	6,800	Metal	Good	16	Lan-Dale	0
B-306	Victor II Hangar	6,800	Metal	Good	14	Victor II	0
B-307	Redman Hangar	6,800	Metal	Good	14	Redman	0
B-308	Hotton Aviation Hangar	6,800	Metal	Good	14	Hotton Aviation Enterprises	0
B-309	Self Service Fuel Facility		12,000 gallon tanks (1 diesel, 2 gasoline)	Good	18	Tucson Airport Authority	
B-315	Triturator and Wash Rack			Good	1	Tucson Airport Authority	0
B-400	Environmental Research Lab		Many types			University of Arizona	18
B-FFA	Fuel Farm A (25,000 gallons)				23	Tucson Airport Authority	0
B-FFB	Fuel Farm B (25,000 gallons)				23	Tucson Airport Authority	0
B-FFD	Fuel Farm D					Tucson Airport Authority	0
B-P&S	Park & Save Lot (pay booth)	75	Metal	Good	Unknown	Tucson Airport Authority/Ace Parking	3,508
B-PST	Autoparks Short-term Lot (3 booths and office)	1,210	Steel/masonry		3	Tucson Airport Authority/Ace Parking	1,416
B-W9	Well #9 Pump House (pump house building removed)	n/a	n/a			Tucson Airport Authority	0
C-175	Flight Safety Building	24,440	Brick/metal	Good	2	Flight Safety International	12
C-176	Learjet Executive Offices	7,200	Concrete block and wood	Good	42	Learjet	20
C-241	RTR Remote Site	1,000	Concrete block	Good	24	Learjet	Service vehicles
C-266	Hughes Credit Union	8,700	Masonry and steel	Good	20	Hughes	25

Table 2-1 (page 6 of 8)
BUILDING INVENTORY
 Tucson International Airport

Building No.	Building name	Area (sq ft)	Type of construction	Condition	Age (years)	Building tenant(s)	Parking spaces
C-268	Learjet Factory	75,600	Masonry and steel	Good	19	Learjet	300
C-269	Shade Ramada	4,600	Steel	Good	19	Learjet	0
C-270	Learjet Interiors Facility	10,800	Masonry and steel	Good	19	Learjet	50
C-271	Learjet Service Hangar & Office	36,200	Masonry and steel	Good	18	Learjet	150
C-285	Learjet Aircraft Manufacturing Building	149,327	Masonry and steel	Good	15	Learjet	500
C-286	Learjet Construction Offices	600	Metal	Good	21	Learjet	Service vehicles
C-291	Learjet Maintenance	36,894	Metal	Good	15	Learjet	0
C-292	Learjet Gate House & Security	100	Metal	Good	Unknown	Learjet	0
C-294	Learjet Paint Building	37,510	Metal	Good	14	Learjet	0
C-295	Learjet Maintenance Building	6,361	Metal and block	Good	15	Learjet	0
C-296	Learjet Customer Service	53,472	Metal and block	Good	14	Learjet	175
C-297	Learjet Paint Prep	14,344	Metal	Good	14	Learjet	0
C-300	Lockheed Hangar	234,000	Metal and masonry	Good	5	Lockheed	300
C-301	Lockheed Offices	19,000	Metal	Good	10	Lockheed	0
C-302A	1250 E. Aero Park	9,736	Block/metal	Poor	15	Tucson Airport Authority	35
C-302B	1250 E. Aero Park	5,488	Block/metal	Poor	15	Tucson Airport Authority	0
C-302C	1250 E Aero Park	969	Block/metal	Poor	15	Tucson Airport Authority	0
C-303	Petsche Warehouse	20,800	Block	Good	14	A.E. Petsche	30
C-304	Tucson Electric Substation	22,500				Tucson Electric	
C-305	Lockheed Gate House	100	Metal	Good	5	Lockheed	
C-400	Hughes Aircraft Complex						

Table 2-1 (page 7 of 8)
BUILDING INVENTORY
 Tucson International Airport

Building No.	Building name	Area (sq ft)	Type of construction	Condition	Age (years)	Building tenant(s)	Parking spaces
C-FFE	Fuel Farm E (gallons)				43	Hughes	0
D-1-1	TAC Hangar	125,000	Wood	Fair	53	Tucson Industrial Center	125
D-2-2	TAC Hangar	125,000	Wood	Fair	53	Tucson Industrial Center	25
D-3-3	TAC Hangar	125,000	Wood	Fair	53	Tucson Industrial Center	125
D-4	Hangar	20,500	Wood/corrugated siding	Fair	44	Paul's Aircraft	10
D-5	Hangar	8,750	Wood/corrugated siding	Fair	44	Paul's Aircraft	30
D-6	Office Building	4,200	Wood/corrugated siding	Fair	44	Paul's Aircraft	0
D-7	Coleman's Hangar	24,500	Wood	Fair	44	Double Eagle & Coleman Aviation	40
D-8	Office	1,400	Modular	Good		Double Eagle Office	8
D-31	Classroom (3 units)	4,000	Wood and metal	Fair	44	Civil Air Patrol	20
D-66-13	Warehouse	3,500	Metal	Poor	51	Tucson Airport Authority	10
D-67-14	Warehouse	3,200	Metal	Poor	51	Tucson Airport Authority	10
D-68-15	Warehouse	3,200	Metal	Poor	51	Tucson Airport Authority	10
D-69-16	Warehouse	4,000	Metal	Poor	51	Tucson Airport Authority	10
D-70-17	Warehouse	5,600	Metal	Poor	51	Tucson Airport Authority	10
D-71-18	Warehouse	3,200	Metal	Fair	51	Tucson Industrial Center, Durodyne	10
D-72-24	Warehouse	29,500	Wood	Poor	51	Vacant	50
D-101-9/10	Old Fire Station	2,330	Brick	Fair	42	Tucson Airport Authority	5
C-305	Lockheed Gate House	100	Metal	Good	5	Lockheed	
D-111	Old Maintenance Shop	2,800	Brick	Fair	51	Tucson Airport Authority	Service vehicles

Table 2-1 (page 8 of 8)
BUILDING INVENTORY
 Tucson International Airport

Building No.	Building name	Area (sq ft)	Type of construction	Condition	Age (years)	Building tenant(s)	Parking spaces
D-114	Storage Building	4,375	Wood	Poor	51	Tucson Airport Authority	5
D-115	Storage Building	200	Wood	Poor	51	Tucson Airport Authority	5
D-153	Warehouse	75,000	Metal	Good	42	Tucson Industrial Center	25
D-157	Bunker	2,975	Concrete block	Fair	42	Vacant	10
D-158	Block Building North	375	Concrete block	Fair	38	Tucson Industrial Center	10
D-159	Vacant	6,250	Wood	Good	42	Tucson Industrial Center	0
D-167	Electronic Building	63,250	Concrete block	Good	42	Samsonite	75
D-170	Barrel House	5,400	Wood and metal	Poor	42	Tucson Industrial Center, A.J. Scopelite	Loading and unloading
D-250	Southwest Greetings	1,200	Trailer	Fair	Unknown	Tucson Industrial Center/Genco	12
D-252	Hamilton Office	1,650	Trailer	Fair	Unknown	Hamilton Aviation	8
D-255	Hamilton Hangar	15,000	Metal	Good	Unknown	Hamilton Aviation	0
D-260	Hamilton Hangar	34,000	Metal	Good	22	Hamilton Aviation	65
D-261	USFS Slurry Base	4,000	Metal	Good	22	U.S. Forest Service	Service vehicles
D-262	Storage Building	150	Masonry	Good	Unknown	Starship	0
D-267	Hamilton Aviation Hangar	21,500	Metal	Good	10	Hamilton Aviation	25
D-FFC	Fuel Farm C (25,000 gallons)				43	Tucson Airport Authority	
D-FFD	Fuel Farm D (25,000 gallons)				42	Tucson Airport Authority	
D-SS	Sunnyside School					University of Arizona	

Sources: Originally prepared by Urban Engineering, Inc., and updated by Leigh Fisher Associates based on visual inspection and information provided by the Tucson Airport Authority.

Table 2-2
AIRPORT RUNWAYS

Runway	Orientation	Pavement length (feet)	Pavement width (feet)	Pavement condition
11L-29R (primary)	Northwest-southeast	10,994	150	Excellent
11R-29L (temporary)	Northwest-southeast	9,118 (a)	75	Fair
3-21 (crosswind)	Northwest-southeast	7,000 (b)	150	Fair

(a) Runway 11R has a displaced threshold of 2,118 feet, leaving a usable landing length of 7,000 feet.

(b) Runway 3 has a displaced threshold of 841 feet, leaving a usable landing length of 6,159 feet.

Source: Urban Engineering, Inc.

Lighting

A summary of runway lighting facilities is provided in Table 2-3.

AVIGATION

Avigation refers to the navigation of aircraft, which requires certain facilities, restrictions, operating procedures, and flight conditions. These include imaginary surfaces and obstructions, runway protection zones, navigational and landing aids, airspace procedures, air traffic control jurisdiction, controlled airspace, and special use airspace. The procedures and conditions pertinent to aircraft operations at Tucson International Airport are discussed in the following sections.

Table 2-3
SUMMARY OF EXISTING RUNWAY FACILITIES
Tucson International Airport

	Runway 11L-29R		Runway 11R-29L		Runway 3-21	
	11L	29R	11R	29L	3	21
Runway pavement length (feet)	10,994	10,994	9,118	9,118	7,000	7,000
Displaced arrival threshold (feet)	None	None	2,188	None	841	None
Runway landing length (feet)	10,994	10,994	7,000	9,118	6,159	7,000
Effective gradient	0.63%	0.63%	0.62%	0.62%	0.17%	0.17%
Approach surface slope	50:1	34:1	20:01	20:01	20:01	20:01
Runway threshold elevation (feet above MSL)	2,575	2,641	2,583	2,615	2,561	2,567
Wind coverage (13 knots) (a)	97.40%	97.40%	97.40%	97.40%	95.50%	95.50%
Runway marking	Precision	Nonprecision	Basic	Basic	Basic	Basic
Runway lighting	HIRL	HIRL	MIRL	MIRL	MIRL	MIRL
Approach aids	MALSR, PAPI (P4L)	REIL, VASI (V6L)	REIL	REIL	None	REIL, VASI (V4L)
Instrument runway status	Precision	Nonprecision (3/4 mile) (b)	None	None	None	None
Arresting device	Yes	Yes	None	None	None	None
Pavement strength (pounds)	SW 160,000		SW 120,000		SW 105,000	
	DW 200,000		DW 140,000		DW 137,000	
	DTW 350,000		DTW 220,000		DTW 230,000	
	DDTW 585,000				DDTW 500,000	

DDTW = Double dual tandem wheel aircraft
DTW = Dual tandem wheel aircraft
DW = Dual wheel aircraft
HIRL = High intensity runway lights
MALSR = Medium intensity approach light system with runway alignment indicator lights
MIRL = Medium intensity runway lights
MSL = Mean sea level
PAPI = Precision approach path indicator
REIL = Runway end identifier lights
SW = Single wheel aircraft
VASI = Visual approach slope indicator
VOR = Very high frequency omnidirectional range

(a) All weather wind coverage - allowable crosswind component for air carrier aircraft shown in parentheses.
(b) Minimum visibility for approaches, in statute miles.

Sources: Tucson International Airport records, April 1994, and *Airport/Facility Directory*, July 29, 1995.

Imaginary Surfaces and Obstructions

The airspace in the vicinity of airports consists of a set of imaginary or obstacle limitation surfaces, as described in Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*. The five principal imaginary surfaces are the primary surface, the approach surface, the horizontal surface, the transitional surface, and the conical surface. The slopes of similar nonhorizontal surfaces are generally the same at all airports except for approach surfaces, which vary depending on the types of navigational aids that are available at each airport. The approach surface slope for each runway end at Tucson International Airport is depicted on Exhibit 2-1 and listed in Table 2-2.

Any existing or proposed manmade object, object of natural growth, or terrain is an obstruction to air navigation if it penetrates an imaginary surface or is of greater height than allowed under other specific conditions described in FAR Part 77. According to the "Airport Obstruction Chart" for the Airport* several obstructions are located within the runway approach surfaces and airfield clearance areas. Many of the obstructions are bushes, which penetrate the approach surfaces for Runways 3, 29L, and 29R. Lighted manmade obstructions are listed in Table 2-4.

Runway Protection Zones

The land underlying the runway protection zones for all but two of the runway ends is owned by the Tucson Airport Authority. The runway protection zone for the approach to Runway 3 lies within the San Xavier Indian Reservation, and a small portion of the runway protection zone for the approach to Runway 29L overlies land owned by Hughes Missile Systems.

Navigational and Landing Aids

Navigational and landing aids for aircraft operations at the Airport are described below.

FAA Airport Traffic Control Tower (Tower). The Tucson Tower is located approximately 1,000 feet northwest of the passenger terminal complex at Tucson International Airport. The Tower is approximately 55 feet tall and provides office space for FAA personnel, equipment storage, and maintenance rooms. It is capped by a glass-enclosed cab for air traffic controllers.

*U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, October 1993.

Table 2-4
LIGHTED OBSTRUCTIONS TO AIR NAVIGATION
Tucson International Airport

Item	Runway affected	Feet above mean sea level
Wind direction indicator	11L, 29R	2,649
Wind direction indicator	11L, 29R	2,591
Windsock	11L, 29R	2,607
Windsock	11L, 29R	2,643
Glide slope antenna	11L, 29R	2,609
Building	11L	2,576
Localizer	29R, 29L	2,666
Pole	29R	2,679
Very High Frequency Omnidirectional Range/Tactical Air Navigation facility	29R, 29L	2,710
Windsock	11R, 29L	2,627
Windsock	11R, 29L	2,597
Pole	29L	2,664
Windsock	3, 21	2,578
Windsock	3, 21	2,570
Railroad	3	2,579
Railroad	3	2,580
Light	3	2,597
Light	3	2,596
Light	3	2,603
Anemometer	n.a.	2,608
Antenna and airport beacon on FAA Tower	n.a.	2,732
Hangar	n.a.	2,610
Hangar	n.a.	2,615
Antenna on tank	n.a.	2,733
Pole	n.a.	2,641
Antenna on remote transmitting receiver tower	n.a.	2,643
Antenna on hangar	n.a.	2,623
Antenna on remote transmitting receiver tower	n.a.	2,634
Pole	n.a.	2,614
Pole	n.a.	2,608
Antenna on tank	n.a.	2,783
Stack	n.a.	2,648
Tower	n.a.	2,829
Transmission tower	n.a.	2,851

Note: Airport imaginary surfaces are specified in Federal Aviation Regulations (FAR)
Part 77, *Objects Affecting Navigable Airspace*.

n.a. = Not attributable to a particular runway.

Source: National Oceanic and Atmospheric Administration, *Obstruction Data Sheet*.

Instrument Landing System (ILS). An ILS is an electronic ground station that provides azimuth, elevation, and position guidance during approach to the runway. Basic components of an ILS are a localizer antenna for azimuth guidance, the glide slope antenna for elevation guidance, and outer and middle marker beacons for position information.

ILS Category I equipment has been installed for approaches to Runway 11L. For ILS approaches to Runway 11L, the cloud ceiling must be at least 200 feet and the Runway Visual Range (RVR) or visibility must be at least 0.5 statute mile. RVR is an instrumentally derived value that represents the horizontal distance a pilot can see down the runway from the approach end of the runway.

Approach Lighting System (ALS). Approach lighting systems assist pilots in making the transition from instrument to visual conditions on the final approach to a runway. Runway 11L is equipped with a medium intensity approach lighting system with runway alignment indicator lights (MALSR) and a precision approach path indicator with four lights (PAPI-P4L). Runway 29R is equipped with a six-box visual approach slope indicator (VASI-V6L) and Runway 21 is equipped with a four-box visual approach slope indicator (VASI-V4L). Runways 11R, 29L, and 3 currently do not have approach lighting systems. Runways 11R, 21, 29R, and 29L are equipped with runway end identifier lights (REIL).

VASI and PAPI provide, through a system of lights, the proper approach slope to a runway, similar to the glide slope of an ILS. VASI systems are intended for day and night use under visual flight conditions, and require a minimum of two sets of lights. PAPI systems give a more definitive indication of approach slope to the pilot and require only a single set of lights at one point down the runway.

Very High Frequency Omnidirectional Range/Tactical Air Navigation Facility (VORTAC). The term VORTAC refers to a navigational aid that incorporates Very High Frequency Omnidirectional Range (VOR) and Tactical Air Navigation (TACAN) equipment that provides both azimuth and distance information. The Tucson VORTAC is located 3,500 feet southeast of the approach end of Runway 29R and is used for both en route navigation and instrument approaches. VOR instrument approach procedures have been established to Runways 11L and 29R.

Nondirectional Radio Beacon (NDB). The NDB transmits nondirectional radio signals that allow a pilot to determine the bearing to or from the radio beacon. An NDB is located at Ryan Airfield, approximately 13 nautical miles west of Tucson International Airport.

Airport Surveillance Radar (ASR). The ASR is used in the control of air traffic within a 40- to 60-mile radius of the Airport. The ASR scans 360 degrees of azimuth and presents target information on radar display equipment.

Airspace Procedures

Visual and Instrument Flight Rules. All aircraft flights are governed by either visual flight rules (VFR) or instrument flight rules (IFR).^{*} The basic difference between VFR and IFR is that a pilot uses visual reference to navigate an aircraft under VFR and aircraft instruments to navigate under IFR.

When weather conditions are poor (e.g., when the cloud ceiling is less than 1,000 feet or the visibility is less than 3 miles), pilots are required to fly according to IFR in controlled airspace.^{**} Although IFR weather conditions in the Tucson area, as defined above, occur less than 1% of the time, all air carrier aircraft and many military and high-performance general aviation aircraft operate under an IFR flight plan regardless of weather conditions.

The minimum separation of aircraft in the airspace depends on several factors, including aircraft size, aircraft speed, and the type of navigational aids available. Under IFR conditions, the minimum required separation between aircraft operating below 18,000 feet and within 40 miles of the Tucson ASR is 3 nautical miles (nm) horizontally or 1,000 feet vertically. However, when "small" aircraft are following "large" or "heavy" jets,^{***} the longitudinal (in-trail) separation required between successive aircraft increases to as much as 6 nm (the U.S. Air Force requires 10-nm IFR separation for nonheavy aircraft operating behind a heavy jet).

Terminal Routes. Standard Terminal Arrival Routes (STARs) and standard instrument departure (SID) routes have been established by the FAA as an aid to air traffic control (ATC) and pilots. STARs and SIDs help reduce verbiage on ATC radio frequencies by providing the pilot with a coded description of the assigned terminal routing.

^{*}Definitions are contained in FAR Part 91, *General Operating and Flight Rules*.

^{**}Except under Special VFR, as defined in FAR Part 91.

^{***}For purposes of determining minimum safe aircraft separations, aircraft are classified as heavy, large, or small, as defined below:

1. Heavy—Aircraft capable of a takeoff weight of 300,000 pounds or more, whether or not they operate at this weight during a particular phase of flight.
2. Large—Aircraft of more than 12,500 pounds maximum certificated takeoff weight, up to 300,000 pounds.
3. Small—Aircraft of 12,500 pounds or less maximum certificated takeoff weight.

Within the Tucson airspace, pilots operating under IFR conditions are radar-vectorred as necessary by the Tucson Terminal Radar Approach Control (TRACON) facility, located at Davis-Monthan Air Force Base, to their assigned routes or instrument approach procedures for sequencing with, and separation from, other aircraft. A radar-vector is a heading issued to a pilot to provide navigational guidance by radar.

Instrument Approach. The two basic categories of instrument approach procedures are precision and nonprecision. A precision approach procedure is a standard procedure that provides each pilot with an electronic glide slope and glide path. Pilots using precision approach procedures rely on the following navigational aids:

- Instrument landing system (ILS)
- Precision approach radar (PAR)
- Global positioning system (GPS)

The nonprecision approach procedure is a standard procedure in which no electronic glide slope is provided. Pilots using nonprecision approach procedures rely on the following navigational aids:

- Very high frequency omnidirectional range, with and without distance measuring equipment (DME)
- Nondirectional radio beacon
- Airport surveillance radar
- Localizer and localizer back course, with and without DME
- Tactical area navigation

Airports in the Tucson area with at least one published instrument approach procedure are Tucson International Airport, Ryan Airfield, and Davis-Monthan Air Force Base.

A missed approach is conducted by a pilot when the approach cannot be completed by landing. Missed approach procedures are specified for each published instrument approach procedure. The route of flight and altitude associated with a missed approach procedure are shown on instrument approach procedure charts published by the FAA. However, because ATC radar service is provided in the Tucson area, pilots executing a missed approach follow radar-vectors in lieu of published missed approach routes. If radio communications cannot be maintained while executing a

missed approach procedure, the pilot then follows published missed approach procedures.

Instrument Departure. For aircraft departing from specific runways, standard instrument departure procedures specify the direction of flight, and altitudes at which the direction can be changed (often based on instructions from the Tower). Departure procedures are developed to (1) ensure safe flight operations by avoiding obstructions and/or complying with airspace restrictions and (2) reduce air traffic controller and pilot workload. At the Airport, SID procedures for all runways specify flying on runway heading until issued a vector to intercept the appropriate transition.*

Air Traffic Control Jurisdiction

There are three categories of airspace jurisdictions within the Tucson area; (1) Air Route Traffic Control Center (ARTCC) airspace, (2) TRACON airspace, and (3) Tower airspace. These categories and other controlled airspace are described below.

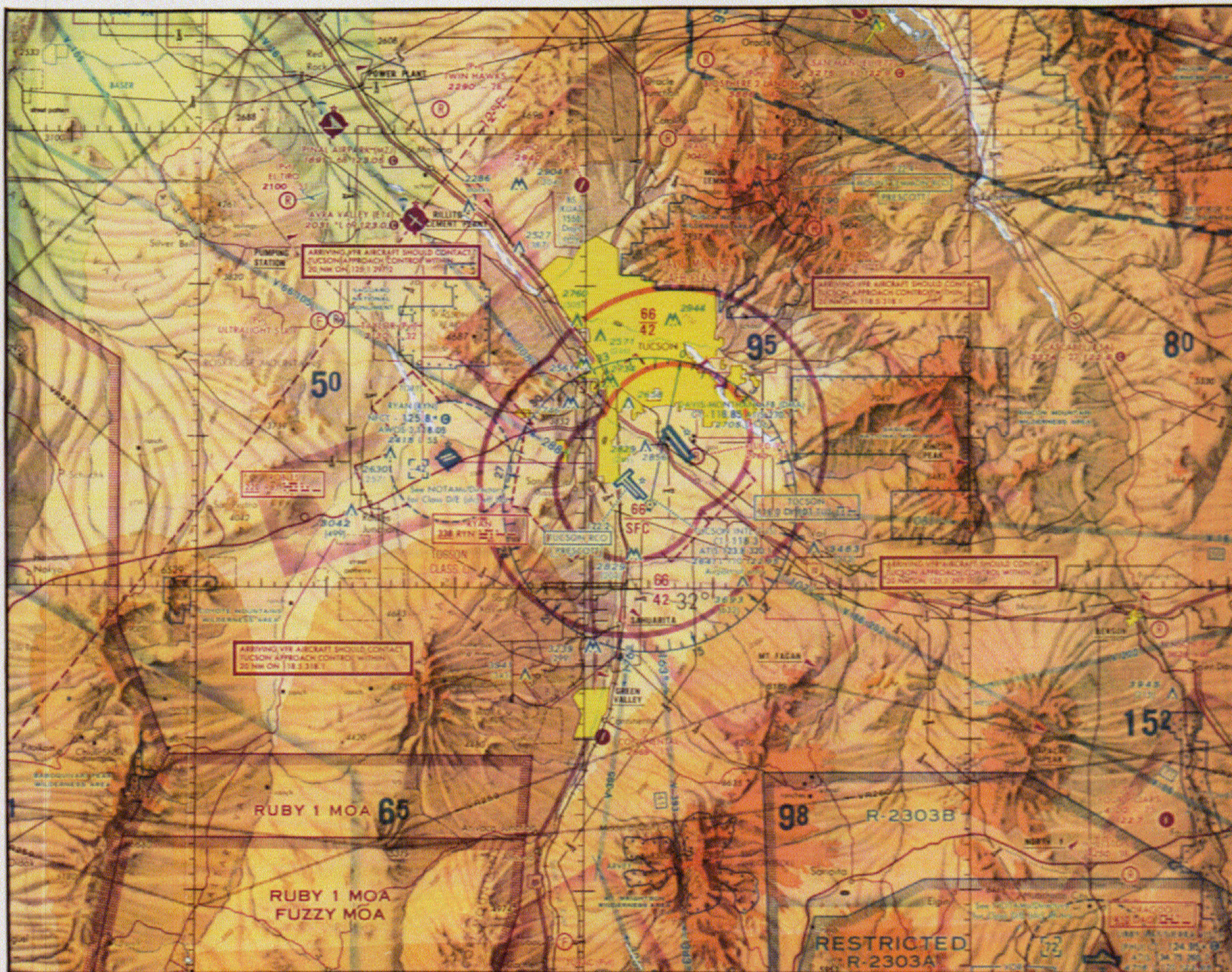
Air Route Traffic Control Center Airspace. The continental United States is divided into 20 geographic areas, or Centers, under the ATC jurisdiction of ARTCCs. The ARTCC with jurisdiction over Tucson International Airport is located in Albuquerque, New Mexico.

TRACON Airspace. The Albuquerque Center has delegated certain airspace overlying the Tucson area to the Tucson TRACON facility located at Davis-Monthan Air Force Base.

The purpose of a TRACON is to provide radar approach and departure control and other ATC services in a terminal area. In radio communications, the Tucson TRACON is referred to by pilots as either Tucson approach or Tucson departure control, depending on the phase of flight. The area within and around the Tucson TRACON airspace is depicted on Exhibit 2-2.

Tower Airspace. The airspace under the jurisdiction of an FAA or military control tower, called an airport traffic area, is generally defined as the area within a 5-statute-mile radius of an airport that has an operating control tower and from the ground up to, but not including, 3,000 feet above the airport. The purpose of an

*A SID transition is a published route used to connect the basic SID to one of several en route airways or jet routes.



LEGEND

- Towered airport with hard-surfaced runways greater than 8,069 feet long
- Towered airport with hard-surfaced runways 1,500 to 8,069 feet long
- Nontowered airport with hard-surfaced runways greater than 8,069 feet long
- Nontowered airport with hard-surfaced runways 1,500 to 8,069 feet long
- Nondirectional radio beacon
- Very high frequency omnidirectional range/tactical air navigation (VORTAC) facility
- Class C airspace boundary
- Class D airspace boundary
- Class E airspace boundary
- Victor airways
- Restricted area boundary
- Military operations area boundary

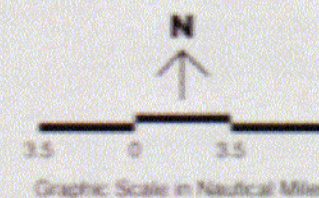


Exhibit 2-2
TUCSON TERMINAL AIRSPACE AREA
Master Plan Update
Tucson International Airport
November 1996

airport traffic area is to provide airspace within which air traffic controllers in a Tower can control the movement of aircraft on and near an airport. Control of aircraft arriving, departing, and taxiing at an airport is provided by controllers in the Tower to ensure the safe, orderly, and expeditious flow of traffic. Unless authorized or required by ATC, no person may operate an aircraft within an airport traffic area except to land or take off from an airport within that area. Within the Tucson TRACON airspace, there are airport traffic areas at Davis-Monthan Air Force Base, Ryan Airfield, and Tucson International Airport.

Controlled Airspace

Class C Airspace. Class C airspace (previously referred to as an airport radar service area [ARSA]) is controlled airspace surrounding designated airports wherein ATC provides radar vectoring and sequencing on a full-time basis for all aircraft operating under VFR or IFR.

The Tucson Class C airspace boundary is shown on Exhibit 2-2. Within a 5-nm radius of Tucson International Airport and Davis-Monthan Air Force Base, the Class C airspace extends from the surface up to 6,600 feet above MSL. Within the 5 nm to 10 nm portion of the Class C airspace, the vertical limits are between 4,200 feet and 6,600 feet above MSL.

Air traffic services provided within the Tucson Class C airspace include the following:

- Sequencing of all aircraft arriving at Tucson International Airport or Davis-Monthan Air Force Base
- Provision of standard separation between aircraft being operated under IFR
- Provision of separation between traffic and safety advisories to aircraft being operated under both IFR and VFR
- Provision of traffic and safety advisories between aircraft being operated under VFR

Class D Airspace. Class D airspace is the controlled airspace surrounding designated airports with operating control towers from the surface to a specified height above the airport. The only Class D airspace in the Tucson area has a surface area with a radius of approximately 4 miles around Ryan Airfield that extends from the surface up to but not including 4,200 feet above MSL. The Class D airspace is shown on Exhibit 2-2.

Class E Airspace. Generally, Class E airspace is controlled airspace that is not otherwise classified. Class E airspace has been established for rectangular areas northwest and southwest of Ryan Airfield (abutting the Class D airspace); northwest, west, and southeast of Tucson International Airport; and northwest and southeast of Davis-Monthan Air Force Base. The Class E airspace is shown on Exhibit 2-2.

Special Use Airspace

Within the jurisdictional categories explained above, there are other categories of airspace in the Tucson area, including:

- Low altitude airways and jet routes
- Military Operations Areas
- Restricted Areas

Low Altitude Airways and Jet Routes. A low altitude airway, known as a Victor airway, is represented with a "V" preceding its identification number. A jet route has a "J" preceding its identification number. These airways and routes are defined by radio signals from a VORTAC. There is a radial configuration of airways and routes around the Tucson VORTAC.

Victor airways extend up to, but do not include, 18,000 feet above MSL. Jet routes extend between 18,000 feet and 45,000 feet above MSL. Victor airways and jet routes in the Tucson area are also depicted on Exhibit 2-2.

Military Operations Areas. A Military Operations Area (MOA) is an airspace assignment of defined vertical and lateral dimensions that is established outside of positive control areas. The purpose of an MOA is to separate certain military aviation activities, such as pilot training, from civilian aircraft being operated under IFR, and to identify to pilots operating aircraft under VFR where these activities are located. Aircraft not participating in military aviation activities but that are being operated under IFR may fly within MOAs only if ATC can provide IFR separation from participating aircraft. Nonparticipating aircraft being operated under VFR may fly within MOAs, but pilots of such aircraft should use extreme caution.

MOAs are located approximately 33 miles west (Sells 1 and Sells Low) and about 18 miles southwest (Ruby 1 and Fuzzy) of Tucson International Airport. The Albuquerque Center is responsible for air traffic control services within the MOAs. The MOAs are normally used only on weekdays from 6:00 am to 7:00 p.m. The boundaries of MOAs closest to the Airport are shown on Exhibit 2-2.

Restricted Areas. Segments of airspace are designated as restricted areas if it is determined that certain aircraft activities could be hazardous to nonparticipating aircraft. When restricted areas are not required for their designated activity, they are sometimes available for joint use by both civil and military aircraft.

Restricted Areas R-2303A and R-2303B are located southeast of Tucson International Airport, beginning about 19 miles from the Airport. The floor of Restricted Area R-2303A is 1,200 feet above ground level (AGL) and the upper limit is 15,000 feet above MSL. Restricted Area R-2303B extends from 15,000 feet above MSL to 45,000 feet above MSL. Both restricted areas operate from 7:00 a.m. to 4:00 p.m., Monday through Saturday and are under the control of the Albuquerque Center. The boundaries are shown on Exhibit 2-2.

PASSENGER TERMINAL COMPLEX

The 55-acre passenger terminal complex at Tucson International Airport accommodates the passenger terminal buildings, aircraft parking apron, and entrance and circulation roadways and automobile parking areas.

Main Passenger Terminal Building

The main passenger terminal building was opened in 1963. The building and two concourses contain about 320,000 square feet of space. All areas except the mechanical equipment rooms and baggage makeup rooms are enclosed and air conditioned.

The building is a three-level structure. Baggage claim areas, deplaning roadway, airline baggage makeup, public restrooms, and ground transportation services are on the ground level. Airline ticket/check-in counters, enplaning roadway, public waiting areas, concession space, and restrooms are located on the second level. A restaurant, bar, kitchen, banquet rooms, and Airport offices are located on the third level. The allocation of airline space within the terminal building is shown in Table 2-5.

The concourses are two-level structures. Passengers enter one of two concourses via the lobby/ticketing area from the enplaning roadway on the second level. Airline ramp activities and electrical rooms are accommodated on the ground level, and passenger holdrooms, circulation corridors, restrooms, and concessions occupy the upper level. There are about 840 linear feet of upper-level curbside and about 700 linear feet of lower-level curbside at the main passenger terminal building. A commercial vehicle area with 78 loading/unloading spaces is between the terminal building and the public parking lot.

Table 2-5
AIRLINE SPACE ALLOCATION
 Tucson International Airport

<u>Airline</u>	<u>Space category</u>	<u>Area (square feet)</u>
Main Passenger Terminal Building		
Alaska Airlines	Operations Area	120
	Bag Makeup	900
	Holding Area	1,697
	Back Office	690
	Ticket Counter	<u>215</u>
	Total	3,622
American Airlines	Operations Area	3,462
	Bag Storage	384
	Bag Makeup	3,180
	Holding Area	3,806
	Ticket Counter	278
	Ticket Office	<u>2,006</u>
	Total	13,116
America West Airlines	Operations Area	2,018
	Operations Area Joint Use	548
	Bag Makeup	2,666
	Bag Storage	405
	Holding Area	3,823
	Ticket Counter	520
	Ticket Office	<u>1,958</u>
	Total	11,938
Arizona Airways (a)	Office	290
	Ticket Counter	129
	Holdroom	<u>403</u>
	Total	822
Continental Airlines	Operations Area	1,724
	Bag Makeup	1,761
	Holding Area	1,432
	Ticket Counter/Office	<u>1,700</u>
	Total	6,617

Table 2-5 (page 2 of 3)
AIRLINE SPACE ALLOCATION
 Tucson International Airport

<u>Space type</u>	<u>Space category</u>	<u>Area (square feet)</u>
Main Passenger Terminal Building (cont.)		
Delta Air Lines	Operations Area	5,824
	Bag Makeup	2,610
	Bag Storage	171
	Holding Area	3,383
	Ticket Counter	1,365
	Bag Storage Temporary	
	Cabinet	<u>33</u>
	Total	13,386
Northwest Airlines (b)	Operations Area	2,600
	Bag Makeup	720
	Holding Area	2,810
	Ticket Counter	284
	Ticket Office	<u>1,589</u>
	Total	8,003
Reno Air	Ticket Counter and Holdroom	1,681
SkyWest Airlines	Ticket Counter	300
Southwest Airlines	Operations Area	2,384
	Bag Storage	193
	Bag Makeup	1,680
	Holding Area	2,779
	Ticket Counter	714
	Ticket Office	<u>1,882</u>
	Total	9,632
United Airlines	Operations Area	691
	Bag Makeup	1,418
	Bag Storage	219
	Holding Area	1,337
	Ticket Counter	383
	Ticket Office	<u>1,396</u>
	Total	5,444

Table 2-5 (page 3 of 3)
AIRLINE SPACE ALLOCATION
 Tucson International Airport

Space type	Space category	Area (square feet)
Main Passenger Terminal Building (cont.)		
USAir (b)	Operations Area	2,244
	Bag Makeup	1,380
	Bag Storage	219
	Holding Area	1,432
	Ticket Counter	383
	Ticket Office	<u>2,011</u>
	Total	<u>7,669</u>
Total Main Passenger Terminal Building		82,230
International Terminal Building		
Aeromexico (c)	Ticket Counter and Office	
	Space	<u>1,880</u>
Total airline space		84,110

- (a) Arizona Airways discontinued operations in the summer of 1995. Great Lakes Airlines subsequently acquired certain assets and hired former employees of Arizona Airways and began service at Tucson International Airport in July 1995.
- (b) Aero California subleases ticketing space from Northwest Airlines and USAir.
- (c) Aerolitoral subleases ticketing space from Aeromexico.

Source: Urban Engineering, Inc., based on information provided by the Tucson Airport Authority.

International Terminal Building

The International Terminal Building is a one-level structure of about 15,600 square feet containing check-in, federal inspection services, and baggage claim facilities. The building serves both air carrier and general aviation aircraft. The allocation of airline space in the International Terminal Building is shown in Table 2-5.

Aircraft Parking Apron

There are currently 26 aircraft parking positions for the certificated airlines at the main passenger terminal building and 6 marked parking positions—3 for jet aircraft and 3 for commuter aircraft—at the International Terminal Building. The use of more than 2 of the parking positions at the International Terminal Building could preclude the use of 1 or 2 positions at the main passenger terminal building. Power-in/push-out parking procedures are used at the main passenger terminal building and power-in/power-out procedures are used at the International Terminal Building.

Entrance and Circulation Roadways and Automobile Parking Areas

Access to the passenger terminal complex is primarily via South Tucson Boulevard, a four- and six-lane, north-south divided street, which leads to a one-way entrance roadway loop in front of the main passenger terminal building. South Tucson Boulevard intersects Valencia Road, an east-west, six-lane divided major street, three-quarters of a mile north of the terminal complex. As the roadway approaches the terminal building, it splits into enplaning and deplaning roadways, with the enplaning roadway ramped up to second level.

There are 1,416 public automobile parking spaces in the parking lot adjacent to the terminal—576 spaces for short-term parking and 840 spaces for long-term parking.* In addition, 3,508 spaces are located at the Park & Save Shuttle Parking lot, and 510 spaces are provided in an employee parking lot east of the main passenger terminal building. There are 557 parking spaces for rental car ready and return east of the main passenger terminal building and 78 parking spaces for courtesy vans and other ground transportation vehicles in front of the building.

AIR CARGO AND AIR MAIL FACILITIES

Air cargo facilities at the Airport include two air freight buildings, each accommodating several tenants, and a separate building owned by FedEx. The two Authority-owned buildings are numbered B-239 (old air freight building) and B-298 (new air freight building) in Table 2-1 and on Exhibit 2-1, and contain 14,608 and

*As necessary, the parking lot can be reconfigured so that there are 692 short-term spaces and 712 long-term spaces.

25,548 square feet, respectively. All-cargo airlines, freight forwarders, passenger airlines offering belly-cargo service, and the U.S. Postal Service are tenants of these buildings. Two all-cargo carriers—Emery Worldwide and Airborne Express—have aircraft parking positions adjacent to the air freight buildings as part of these leases. Although the aircraft parking positions are adjacent to the air freight buildings, cargo must be trucked between the buildings and the aircraft.

Most air mail is processed through the Old Pueblo Station at 1501 South Cherrybell Stravenue. The Postal Service facility at the Airport provides (1) a centralized location for receiving and distributing mail to and from the Old Pueblo Station and the airlines that transport mail, (2) a mail and small parcel (shoe-box size) drop-off location, and (3) postage stamps.

The FedEx facility, situated on land leased from the Authority, includes a 16,000-square-foot building (numbered B-255 in Table 2-1 and on Exhibit 2-1) owned by the company. The associated aircraft parking apron, which accommodates three aircraft parking positions, is included in the lease. Two of the parking positions are adjacent to the building, allowing air cargo to be transferred directly from the building to the aircraft. The third parking position is on the other side of the apron.

GENERAL AVIATION FACILITIES

Fixed base operators (FBOs) at the Airport provide a complete range of general aviation services, including major and minor airframe and engine repair, aircraft painting, repair of aircraft electronic equipment, aircraft sales and rentals, charter and air taxi service, and flight training. The FBO activities occupy about 195,000 square feet of office and hangar space, and tiedown positions for about 450 aircraft could be provided.

Plumer Avenue, a two-way secondary entrance roadway, serves the general aviation terminal complex, which includes the Executive Terminal and the Tower Grill coffee shop.

OTHER BUILDING AREAS

Several other areas of the Airport serve distinct functions.

Airport Support

Airport support facilities include Airport administration and maintenance buildings, the Tower, and an aircraft rescue and fire fighting (ARFF) building.

The Tower is northwest of the terminal complex next to the aircraft parking aprons. The 10-story Tower has been in operation since 1958 and has been remodeled once since its opening. It contains 15,200 square feet of space occupied by the Tucson Airport Authority's general aviation services and FAA offices, an FAA flight service station, and the National Weather Service.

The ARFF facility, southeast of the new air freight building, was completed in late 1978. The facility contains about 11,000 square feet of space.

Airline Support

Five fuel farms are located on the Airport with a total capacity of 685,000 gallons. A flight kitchen building of about 25,000 square feet is adjacent to the ARFF facility.

Aircraft Maintenance

Several fixed base operators at the Airport provide complete aircraft maintenance services. Maintenance facilities on or adjacent to the Airport also service aircraft or aircraft equipment. A summary of the maintenance facilities is provided in Table 2-6.

Military

The 162nd Tactical Fighter Training Group, Arizona Air National Guard, is based in an area north of the Airport. The group trains pilots in F-16 aircraft for Air National Guard units throughout the United States and for other military units from around the world.

Industrial and Other Uses

Light industrial activities, most of which are nonaviation oriented, are located on the west side of the Airport adjacent to Tucson-Nogales Highway. Some of the larger lessees have sublet space to a number of firms engaged in a variety of industrial activities.

The Hughes Missile Systems operates Air Force Plant #44 just south of the Airport. The company also leases land for warehouses and other uses from the Tucson Airport Authority along the south side of the Airport. A special taxiway and aircraft parking apron extend southwest of the end of Runway 11R-29L to provide aircraft access to the off-Airport Hughes plant.

Table 2-6

MAINTENANCE FACILITIES
Tucson International Airport

<u>Facility</u>	<u>Services offered</u>
Coleman's Aviation	Heavy maintenance on light aircraft
Custom Aviation	Heavy maintenance on light and heavy aircraft
Double Eagle Aviation, Inc.	Heavy maintenance on light aircraft
Hamilton Aviation	Heavy maintenance on heavy aircraft
Learjet Corp.	Heavy maintenance on learjets
Lockheed	Heavy maintenance on heavy aircraft
Paul's Aircraft	Heavy maintenance on light aircraft
Ratliff Aero	Light maintenance on light aircraft Light maintenance on turbine aircraft
Spirit	Heavy maintenance on light aircraft
Hotton Aviation	Heavy maintenance on light aircraft
Warner Propeller & Governor Co.	Aircraft propeller maintenance, dynamo balancing
Tucson Aerospace	Heavy maintenance on heavy aircraft
Southwest Helicopter	Heavy maintenance on light aircraft
Precision Aviation	Heavy maintenance on light aircraft

Source: Urban Engineering, Inc.

Learjet, currently the largest industrial operator on the Airport, occupies major facilities east of Tucson-Nogales Highway.

A 20-million-gallon water reservoir and pumping station, owned and operated by the City of Tucson, is located in the extended runway protection zone for the northwest end of Runway 11L-29R.

Government and Education

The district offices of the U.S. Department of Justice Drug Enforcement Administration are located on the northeast side of the Airport within the control tower/general aviation area. The University of Arizona Environmental Research Laboratory is located east of the passenger terminal building. The Immigration and Naturalization Service, U.S. Customs Service, and the Department of Agriculture also maintain facilities on the Airport.